(CAT) MANUAL D'INSTRUCCIONS
(ES) MANUAL DE INSTRUCCIONES
(GB) OPERATOR'S MANUAL
(FR) MANUEL D'INSTRUCTIONS
(DE) BEDIENUNGS- ANLEITUNG
(IT) MANUALE ISTRUZIONI
(PT) MANUAL DE INSTRUÇÕES

ROSCAMAT® 200

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ISO 9001 BUREAU VERITAS Certification

TABLE OF CONTENTS

ROSCAMAT® 200

Dear customer:

We wish to take this opportunity to thank you for choosing a "ROSCAMAT" tapping machine to produce quality threads and associated operations.

This operation's manual is given to you so that by careful reading of its contents, it will enable you to maintain its reliability and performance for long-life.

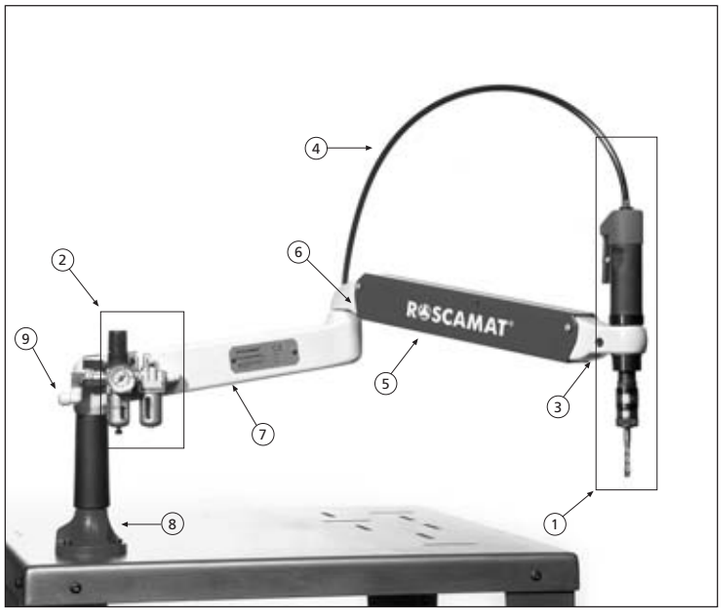
ROSCAMAT-200

DESCRIPTION MACHINE

This machine consists of a pendular parallelogram that is balanced by a pneumatic spring, plus a radial arm. The gas spring and radial arm assembly fixes the motor head and keeps it perpendicular to the working area.

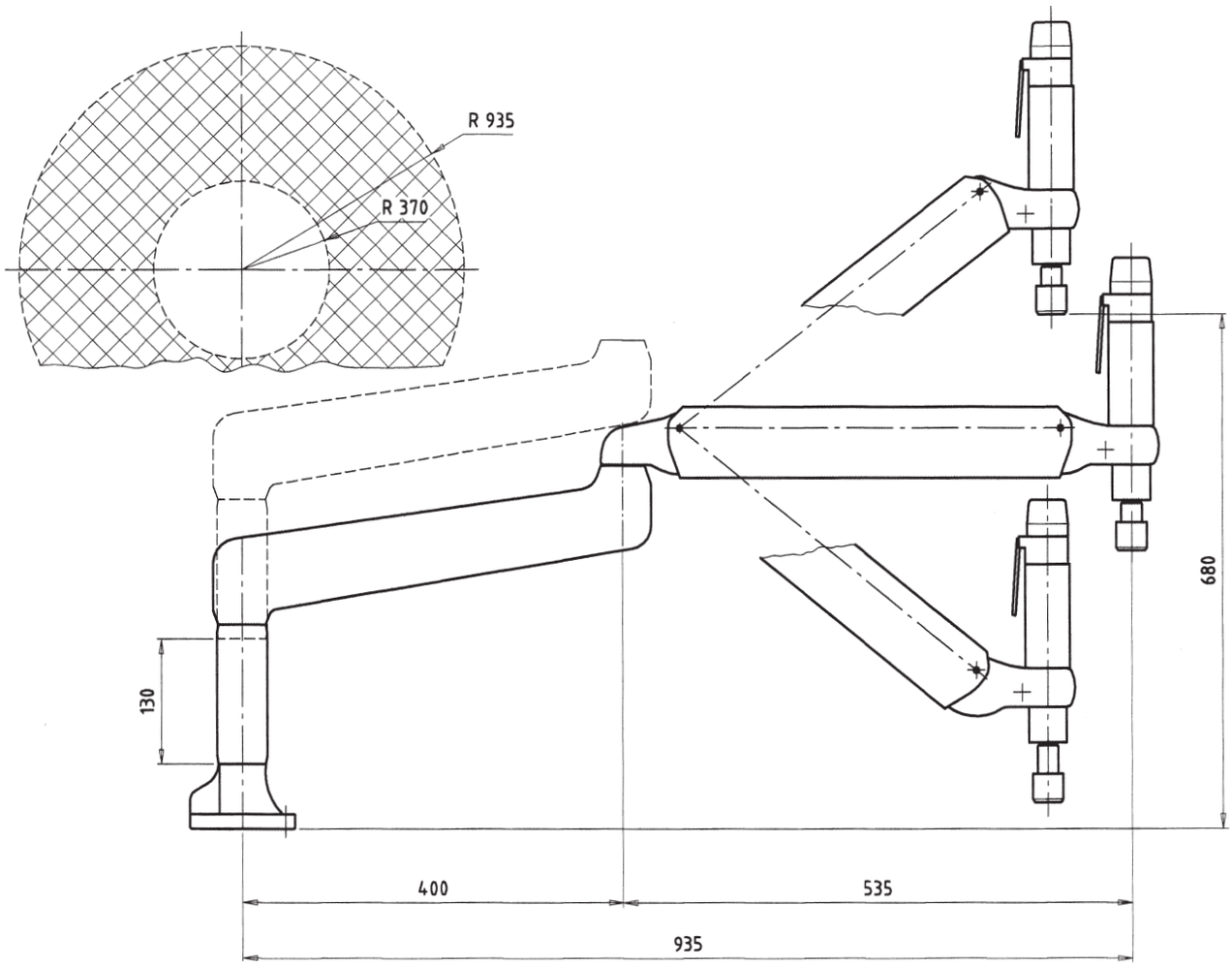
The motor is equipped with a quick-change system and is rotated by compressed air that has previously been filtered and lubricated by a unit for that purpose.

Taps and shank tooling fit to the motor's quick-change system by means of tapholders.



1. Motor
2. Air&lube preparation unit
3. Motor head
4. Air pipe
5. Tilting arm
6. Damper regulating screw
7. Radial arm
8. Machine base plate
9. Intake connection

WORKING AREAS



ROSCAMAT-200 VH

DESCRIPTION MACHINE

The ROSCAMAT-200 can be supplied with an articulated head. This bracket of easy handling can be set in four different positions 90º apart.

Vertical operations:

- Place the motor in vertical position and lock the handle (1) and the milled nut (2) **until completely tightened**. The ROSCAMAT is ready to work.

Horizontal operations:

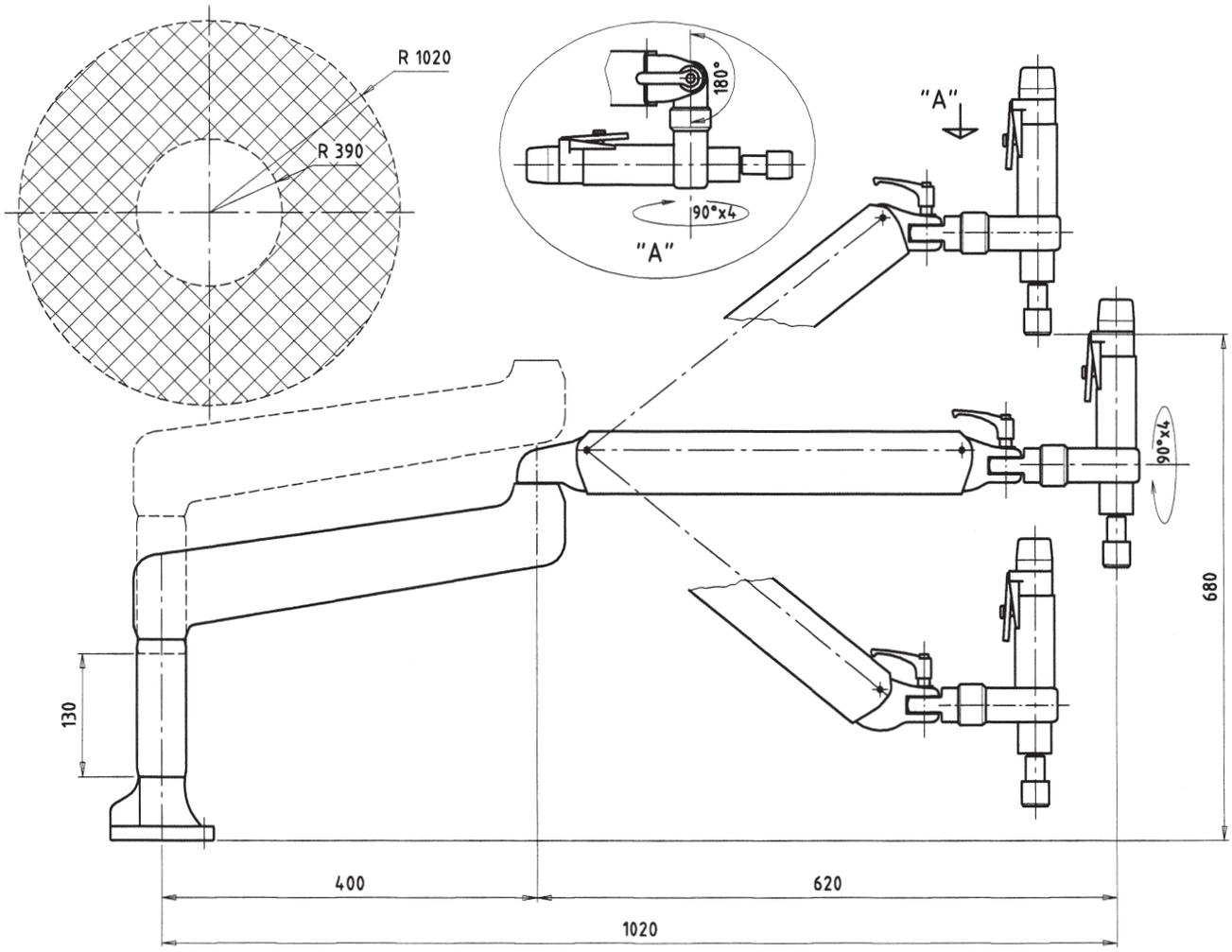
- Loose the milled nut (2) to unlock the joint of the motor.
- Turn the head 90º till you reach the interlock and **strongly** tight the milled nut again.
- Unlock the handle (1) located in the upper side of the head.
- When moving the arm, the operator will have to manually maintain the perpendicularity to the working plane level surface.

Do not lock the handle (1) if you are working in horitzontal operations.

Articulated head

1. Handle
2. Milled nut
3. Motor

WORKING AREAS



Description

PNEUMATIC MOTOR TS-VII
350 rpm / 750 rpm

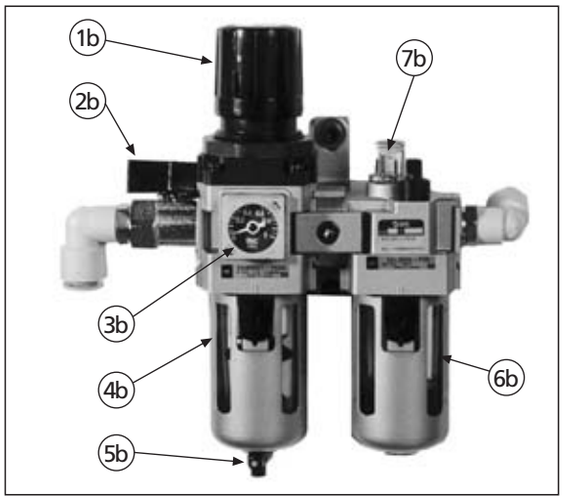
CHARACTERISTICS:
Power: 500 W.
Consumption: 600 l/min.
Motor weight: 1,5 kg.
Noise level: 78 db.
Intake filter: 5 Um.

1a. Exhaust filter
2a. Starting lever
3a. Reversing button
4a. toolholder quickchange

Machine	Max. speed (rpm)	Max. torque (Nm)	Coupling diametre	Max. thread aluminium	Max. thread steel < 90 kg.
200001A1	350	36	Ø 19	M16	M14
200002A1	750	17	Ø 19	M12	M10

REGULATING FILTER UNIT-AIR LUBRICATION

REGULATING FILTER UNIT-AIR LUBRICATION
1b - Pressure regulator.
2b - Flow rate regulating valve.
3b - Pressure gauge.
4b - Reservoir (condensed water).
5b - Drain pipe (WATER)
6b - Oil reservoir (SAE-10)
7b - Lubrication regulating knob and inspection sight glass.



INSTALLATION

A: Attach the machine base plate to the work table by means of three M8 screws or a clamp.

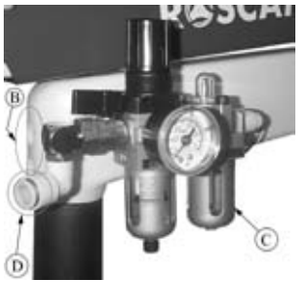
B: Fit the radial arm into the base axle, tighten the 2 Allen M5 and cover them with the two plastic caps.

C: Fill up the reservoir (6b, page 35) with lubricating pneumatique motors oil, SAE-10.

D: The air connection is carried out by means of a notched connection located on the air FRL unit.

IMPORTANT: Table showing the ratio between the length and inside diameter of the feeding pipe:

Length in meters	Minimum inside diameter in mm.
< 8	12
> 8	14

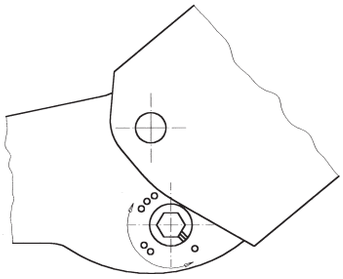


SETTING IN OPERATION

Once the machine has been connected to the main, the following points are to be checked:

1. Supply pressure: 6-8 bars for full power.
2. The pressure gauge reading can drop from 0.5 to maximum 1.5 bars when the motor is started (if a drop greater than 2 bars is noticed, this means that the supply flow rate is not sufficient).
3. Make sure, by checking the sight glass (7b, page 35), that when the machine is in operation, two to three drops per minute are fed. The regulation is carried out by means of the control knob (7b, page 35).
4. Arm balance: Regulate the tightness of the internal damper if the arm descends too far, or has too much ascending strength.

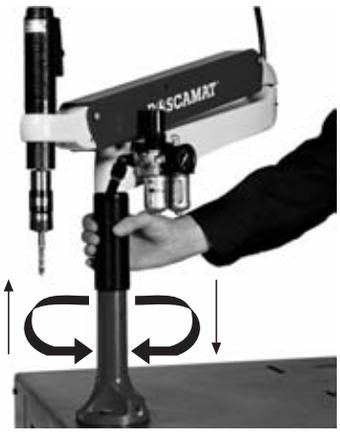
   Position •: minimum tightness
   Position ••: middle tightness
   Position •••: maximum tightness



OPERATION

- Insert the tapholder in the motor quick change. (4a, page 35).
- Clockwise rotation: push lever (2a, page 35).
- Counterclockwise rotation: push simultaneously lever (2a, page 35) and button (3a, page 35).
- **Tapping of high pieces:**

  Hold the base casing, pull it up and turn it 90° to fix it. The machine will be 130 mm higher. Now, it is ready to work.



OPERATION - ANOMALIES

Ref: Slipping clucth type tap holders
The clutch slips and the tap cannot be turned:

- Clutch slackness (page 36).
- No tool lubrication.
- Inappropiate tap for the material to machine (page 37).
- Tap spoiled, "worn".
- Misaligned hole.
- Drilled hole diameter too small.

CLUTCH ADJUSTEMENT (compensating for tap wear)

Remove small spring clip around perimeter and turn the notched nut clockwise or counterclockwise to increase or decrease the clutch tension and put the small ring back on to the new notch.

When neither the tap or the motor will turn, this could be attributed to one of the previous items 2 to 6 or to insufficient motor power

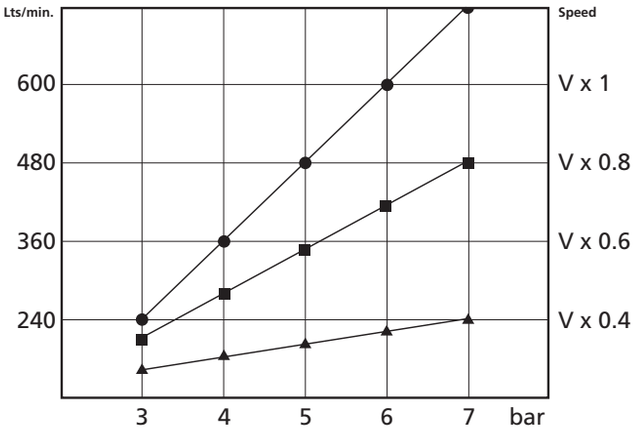
- Check items 1 to 3 (page 36).
- MINIMUM pressure 6 bar (for high power and rotation speed).
- Clogged exhaust filter (page 38).
- Clogged admission filter (in the air group) (page 38).
- Worn motor plates (pages 38).

If the tilting arm descends too far:

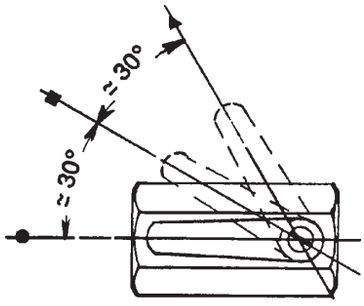
- Turn the regulating handwheel to the position ••• (page 36).
- If the arm continues droping, it is because the damper is faulty. So, you will have to replace it by a new one (page 38).

RATIO (Consumption-Pressure-Rotation speed)

SPEED CONTROL CONSUMPTION CONTROL
It is made by means of the flowrate regulating valve (3b, page 35) and the pressure regulator (1b, page 35).



VALVE POSITION



Machine	Max. speed (rpm)	Max. torque (Nm)	Coupling diametre	Max. thread aluminium	Max. thread steel < 90 kg.
200001A1	350	36	Ø 19	M16	M14
200002A1	750	17	Ø 19	M12	M10

TECHNICAL DATA

TURNING TORQUE Nm FOR THREADING

Metric thread	Steel > 100 kg.	Steel 80-100 kg.	Steel < 80 kg.	Aluminium - Cast Iron
3				
4	2	1.3	1.2	0.8
5	3	2	2	1.3
6	5	4	4	2.4
8	11	8	8	5
10	20	15	14	9
12	33	24	23	14
14	50	36	35	22
16	57	42	40	26

MACHINE TAPS

Blind hole	Helical-flute tap	Lubrication
Through hole	Straight-flute tap with helical feed-in	
Steel > 80 kg.	Rake angle 8-10	Cutting oil with additives
Steel < 80 kg.	Rake angle 12-14	Cutting oil
Steel < 50 kg. Stainless Siemens	Rake angle 14-16 Surface treatment	
Cast iron	Straight-flute tap Surface treatment. Nitrated Rake angle 5	Petroleum, coolant, dry machining
Duraluminium	Rake angle 12-15	Coolant, dry machining
Aluminium	Rake angle 17-25	Cutting oil with additives
Plastics		Coolant, dry machining

Maintenance - Repairs

WARRANTY

The warranty period for the machine is 12 months. The warranty does not cover any damage caused by overloads, wear and improper handling of the machine. The warranty covers the costs of labouring and damaged spare parts. The transport, packaging and assurances are at customers' cost.

MAINTENANCE

Practically the only machine's part that can wear is the motor. Therefore its maintenance should be carried out very carefully, which means that the air supply must be in dry & clean condition. For this purpose the following three points must be taken into account:

1. Drain periodically the water collected in the left air treatment unit cup by pressing the relief knob (5b, page 35).
2. Fill up the right air treatment unit cup with special pneumatique motor oil, SAE-10.(light duty oil).
3. Make sure, by checking the sight glass (7b, page 35) that, when the machine is in operation, between 2 to 3 drops/min are supplied. The regulation is made by means of the control knob (7b, page 35).

EXHAUST FILTER (REPLACEMENT)

Ref. 40202304

- Close the flowrate regulating valve (3b, page 35). Actuate the air-lever of the motor so that the internal air goes out.
- Take out the intake tube and the reversing button (1, 4).
- Unscrew the raccord (2) situated on the upper side of the motor. Remove the external casing (3) and take out the exhaust filter.
- Replace the exhaust filters.
- Reverse the process for the reassembling.

INTAKE FILTER (REPLACEMENT)

Ref. NH120266

Unscrew the left air treatment unit cup (4b, page 35), unscrew the filter and replace it with a new one. The installation is carried out in the reverse order.

MOTOR PLATES (REPLACEMENT)

Ref. NH120846

1. Close the air inlet valve located on the left side of the air filtering unit and press the motor lever so that the air goes out.
2. Remove the intake pipe and unscrew the raccord situated on the upper side of the motor.
3. In continuation, pull out the inversion button, remove the external casing and take out the exhaust filter.
4. Using a pin spanner, loosen the motor housing by unscrewing to the left.

   Be careful with the steel ball that is housed inside the shell.
5. Remove the whole rotor assembly from inside the casing.
6. Pull out the "seeger ring" of the upper part of the motor and remove the upper head, the stator and the MOTOR PLATES.

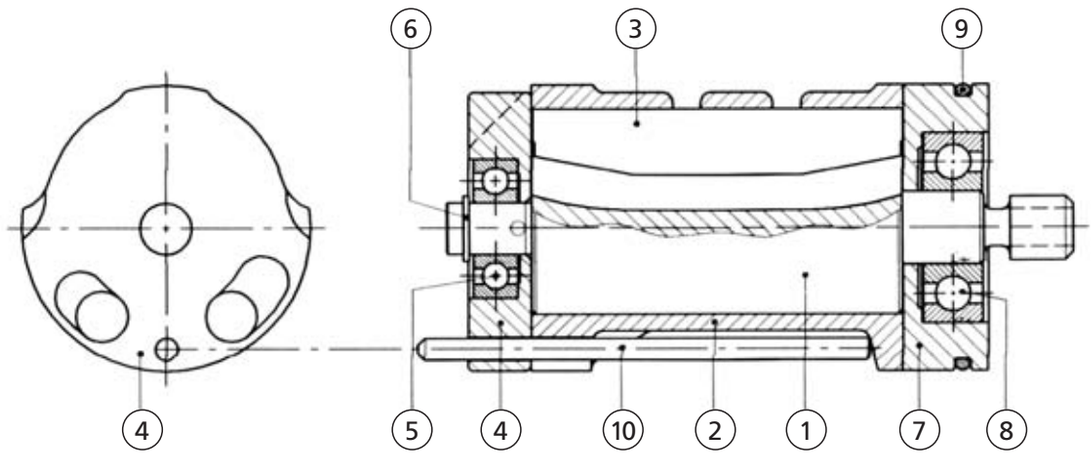
   Notice the direction and positions of the motor stator and the top head.

   CLEAN and BLOW OFF all parts before doing the assembly.

   6a) If it is necessary to replace the motor bearings:

   6b) Use a nylon hammer to separate the ball bearing from the rotor.

   6c) Assemble the entire rotor unit again using two plates with a thickness between 0.6 and 0.8 mm positioned between the rotor and the bottom head unit.
7. Lubricate the new motor plates with SAE-10 oil and mount them on their rotor seatings.
8. Place the motor stator in its right position, install the upper head together with its ball bearing and mount the "seeger ring".
9. Take the whole rotor assembly and insert it vertically and without turning it so that the rod is introduced into the hole provided in the bottom of the motor casing. Once having placed the rod in its seat, screw the whole assembly (LEFT-HAND THREAD) and tighten it with a pin spanner.
10. Mount again the exhaust filters and its casing, exhaust-cover.
11. Screw the intake raccord, install the inversion button and connect the air motor pipe

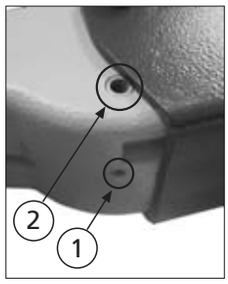


1. Rotor
2. Stator
3. Motor plates
4. Top head
5. Ball bearing 607-Z THB
6. "Seeger" O-ring
7. Bottom head
8. Ball bearing 6000-Z THB
9. Joint
10. Rod Ø2,5 mm.

DAMPER (REPLACEMENT)

Ref. NH100176 (R 200) / Ref. 203B1104 (R 200 VH)

1. Close the air inlet valve located on the left side of the filtering unit . Press the motor lever so that the air goes out.
2. Disconnect the air intake pipe from the motor.
3. Take out the headmember:
   a) Remove the screws that hold the headmember to the arm.
   b) Use the screw M5 to **take out the stay spindle (2).** For doing this operation, the arm must be located in its lowest position. Then, **loosen the screw rod** (1, located below the headmember) that fixes the stay spindle.



4. Take out the spindle of the arm damper. Then unscrew the damper regulating screw (4, page 36).
5. Drop the arm to move the damper out.
6. Attach the new damper, and screw in the regulating screw again. Bear in mind that the screw spindle must fit the end of the damper. Now, place the spindle of the arm damper in its position.

IMPORTANT:
a) The regulating screw cannot jut out of the headmember.
b) The end of the damper must fit correctly in the groove of the spindle of the arm damper.

7. Assemble the headmember and connect the motor. (Do not forget to tighten the screw rod of the stay spindle).

Replacement parts

REPLACEMENT ARM PARTS

  Ref. 20105005 Base — Ref. 201025B7 Base casing	 Ref. 20105104 Radial arm	 Ref. 20101503 Tilting arm
 Ref. 20105204 Cross unit	 Ref. NH100176 (R200) Ref. 203B1104 (R200 VH) Damper	 Ref. 20101903 Regulating damper screw
 Ref. 201055A4 Vertical motor head	 Ref. 20105604 Flat motor head	 Ref. 203B01B0 Revolving motor head VH
 Ref. 20101803 Spindle of the arm damper	 Ref. 20105304 Spindle arm with screws	 Ref. 20105404 Stay — Ref. CL020116 Stay axis

Attention: To avoid any confusion when placing an order of spare parts, please, specify the kind of motor of the machine, **TS VII-350 rpm ó TS VII-750 rpm.**, as well as its serial and machine number.

Replacement parts

MOTOR REPLACEMENT PARTS

Ref. 202A0102 (TS VII-350)
Ref. 202B0102 (TS VII-750)
Pneumatic motor

Ref. 40201703
Rotor

Ref. 40201705
Rotor assembly

Ref. 40201903
Rotor assembly

Ref. 202A0805
Gearbox frame

Ref. 202A0404 (TS VII-350)
Ref. 202A0405 (TS VII-750)
Upper planetary gear train

Ref. 202A0605 (TS VII-350)
Ref. 202B0305 (TS VII-750)
Lower planetary gear train

Ref. 202A0604 (TS VII-350)
Ref. 202B0304 (TS VII-750)
Motor framework assembly

Ref. 40200104
Motor framework

Ref. CO011276
Top rotor bearings

Ref. 40202404
Bottom head & rotor bearing

Ref. NH120846
Motor plates

Ref. 40200304
Starting lever

Ref. 40203004
Inversion Button

Ref. 40200203
Exhaust cover

Ref. 40202304
Exhaust filters

Ref. NH020514
Splitter joint pack

Ref. 40202204
Raccords

Ref. AC090036
Quick-change

Replacement parts

PNEUMATIC REPLACEMENT PARTS

Ref. NH060376
Notched spigot assembly

Ref. NH060366
Flowrate regulating valve

Ref. NH040516
Pressure gauge

Ref. NH110186
Air FRL unit

Ref. NH110236
Sight glass filter (water)

Ref. NH110246
Sight glass lubricator (oil)

Ref. 20105804
Raccords group

Ref. NH120266
Intake filter

Ref. NH110866
Inspectioin sight glass

ACCESORIES REPLACEMENT PARTS

Ref. AC080426 700 x 700 / 850 x 850
Trolley & Table wheel (without brake)

Ref. AC080436 700 x 700 / 850 x 850
Trolley & Table wheel (with brake)

Ref. AC080416 500 x 500
Table wheel

STANDARD PRODUCT RANGE

TS-IV PNEUMATIC MOTOR

Motor	Max. speed (r.p.m.)	Max. torque (Nm)	Coupling diameter	Max. thread aluminium	Max. thread steel < 90 kg.
202A0102	350	36	Ø 19	M16	M14
202B0102	750	17	Ø 19	M12	M10

QUICK-CHANGE TOOLHOLDER

It comprises a wide range of tapholders, with or without clutch; and some other quick holding fixtures for different tools, such as drills, sinking tools, threading dies, socket wrenches, etc.

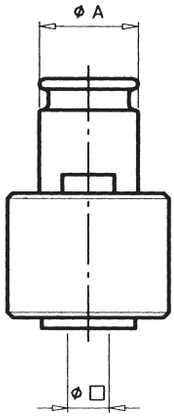
- **Toolholder with safety clutch:**
  (To make the tap slip when it reaches the bottom of the hole)

  Type-1 Ø 19 capacity range M2-M16.

- **Toolholder without safett clutch:**
  (For holding different tools of cylindrical shank and driving cube)

  Type-1 Ø 19 capacity range M2-M16.

NORMALIZED SIZES



DIN 371

Métrica	Ø	□	A
M3	3,5	2,7	19
M4	4,5	3,4	19
M5	6	4,9	19
M6	6	4,9	19
M7	7	5,5	19
M8	8	6,2	19
M10	10	8	19
M12	9	7	19
M14	11	9	19
M16	12	9	19

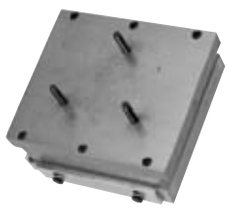
DIN 376

Métrica	Ø	□	A
M6	4,5	3,4	19
M7	5,5	4,3	19
M8	6	4,9	19
M10	7	5,5	19

CLAMP SUPPORTS

- Clamping device:
  To mount the machine on any table or workbench.

- Magnetic support:
  To mount the machine on any flat metallic surface.



DETACHABLE TABLE (2 types)

Sizes (mm.):	850 x 850	700 x 700
Height (mm.):	850	
Weight (kg.):	74	47
Max weight on table:	200 kg.	150 kg.

Provided with:
4 wheels with brakes.
Notches for fixing the workpieces or tools.
Supports for tapholders.

STANDARD PRODUCT RANGE

SMALL TABLE

Table supported by a single column
500 x 500 x 900 mm.

Light and robust, very useful for medium or small pieces. Provided with 4 wheels and notches for attaching the workpieces or tools.

THREADING DIE HOLDER

For die threading.
Capacity range M5 – M12.

COLUMN

Used to mount the machine on the floor by means of 4 metallic dowels.

Base: 350 x 350 x 750 height.

Weight: 20 Kg.

LONG THREADING DIE HOLDER

For guided die threading

Capacity range:M6-M12

- Long threading die holder 19/1 M5-M6
- Long threading die holder 19/1 M8
- Long threading die holder 19/1 M10
- Long threading die holder 19/1 M12-M14

TROLLEY AND COLUMN

For moving the working unit.

With 4 pivoted wheels.

Dimensions:
700 x 700 x 940 mm.

Weight: 124 Kg.

QUICK-CHANGE EXTENSION

To separate tools 80 mm from the headmember, and gain access to difficult areas.

LIFTER: 2 types

- **Pneumatic:** it consists of a collapsible column and a torsion–protected pneumatic cylinder 550 mm. stroke in vertical direction.

Note: the lifter can be mounted onto a column, a trolley, or a table and can support any ROSCAMAT model.

REDUCING CUP

To convert the output diameter from 19 to 13 mm. and be able to match tapholders Type-0.

NOTES

DATE	DESCRIPTION

(CAT) CERTIFICAT "CE" DE COMFORMITAT
(ES) CERTIFICADO "CE" DE CONFORMIDAD
(GB) CERTIFICATE "CE" OF CONFORMANCE
(FR) CERTIFICATE "CE" DE CONFORMITE
(DE) "EG"-ERFÜLLUNGSBESCHEINIGUNG
(IT) CERTIFICATO DI CONFORMITA "CE"
(PT) CERTIFICADO "CE" DE CONFORMIDADE

TECNOSPIRO MACHINE TOOL, S.L.

POL. IND. PLA DELS VINYATS I, C/B, NAVE 2
SANT JOAN DE VILATORRADA
SPAIN

Declarem, sota la nostra única responsabilitat, que la màquina / Declaramos, bajo nuestra única responsabilidad, que la máquina
Hereby certify, on our own responsibility that the machine / Certifions, sous notre seule responsabilité, que la machine
Unter unserer alleinigen Verantwortung erklären, daß die Maschine / Dichiariamo sotto la nostra stessa responsabilit, che la machina
Declaramos sob nossa única responsabilidade, que a máquina

ROSCAMAT 200

SÈRIE Nº	**MÀQUINA Nº**	**ANY DE FABRICACIÓ**
SERIE Nº	**MÁQUINA Nº**	**AÑO DE CONSTRUCCIÓN**
SERIES NR.	**MACHINE NR.**	**YEAR OF BUILT**
SÉRIE Nº	**MACHINE Nº**	**ANNÉE DE CONSTRUCTION**
SERIEN-NR.	**MASCHINEN-NR.**	**BAUJAHR**
SERIE Nº	**MACCHINA Nº**	**ANNO DI COSTRUZIONE**
Nº DE SÉRIE	**MÁQUINA N.º**	**ANO DE FABRICAÇÃO**

Segons es descriu en la documentació adjunta, es conforme amb la Directiva de màquines 2006/42/CE
Según se describe en la documentación adjunta, es conforme con la Directiva de máquinas 2006/42/CE
As per description in the enclosed documents, is in conformance with the Machine Directions 2006/42/CE
Selon décrit dans la documentation ci-joint, est conformément à la Directive de machines 2006/42/CE
nach den in den beiliegenden Unterlagen gemachten Aufführungen die Bedingungen der Maschinenrichtlinie 2006/42/CE
Come descrito nella documentazione allegata, è in coniformita con la Direttiva macchine 2006/42/CE
Segundo descreve a documentação adjunta, está de cordo com a Diretriz de máquinas 2006/42/CE

Es conforme amb les normes harmonitzades / Es conforme con las normas armonizadas / It conforms with the standards
Normes / den harmonisierten Normen / Norme: / Se adequa às normas:

UNE-EN ISO 12100-1:2004
UNE-EN ISO 12100-2:2004

RAMÓN JOU PARROT

ADMINISTRADOR / ADMINISTRADOR / ADMINISTRATOR / ADMINISTRATEUR
VERWALTER / AMMINISTRATORE / ADMINISTRADOR

FIRMA / FIRMA / SIGNATURE / SIGNATURE / UNTERSCHRIFT / FIRMA / ASSINATURA:

TECNOSPIRO
MACHINE TOOL SL

SANT JOAN DE VILATORRADA,
wednesday, 25 september 2013

Edició 8: Setembre 2013 Orriols Balsareny